ENVIRONMENTAL PROTECTION AGENCY
REGION 8

LIBBY ASBESTOS PROJECT

DRAFT DISPOSAL OPERATIONS PLAN FOR THE ABANDONED W.R. GRACE MINE

September 2003

U.S. Department of Transportation
Research and Special Programs Administration

John A. Volpe National Transportation Systems Center
Environmental Engineering Division
55 Broadway, Kendall Square
Cambridge, Massachusetts 02142

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Prepared by:
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Section 1
Introduction

The John A. Volpe National Transportation Systems Center (Volpe Center) is providing environmental engineering and remediation support to Region 8 of the Environmental Protection Agency (EPA). Volpe Center support includes the preparation of technical documents, development of environmental plans (e.g., sampling and analysis, removal action, etc.), environmental assessments and investigations, and removal and remediation projects. Currently the Volpe Center is supporting the EPA's Libby Asbestos Project. Investigative and cleanup actions are taking place under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund. The Volpe Center is providing support for the identification, removal and disposal of asbestos contaminated soil, vermiculite-containing insulation (VCI), and dust at numerous operable units and residential properties located in and around Libby, Montana. The insulation, dust and soil at these properties are contaminated with tremolite asbestos as a result of historic vermiculite mining in Libby, Montana by W.R. Grace.

Libby is the site of the former largest vermiculite mine in the world, which had been operational for 70 years. In the 1920s, the Zonolite Company formed and began mining vermiculite. In 1963, W.R. Grace bought the Zonolite mining operations. The mine closed in 1990. While in operation, the vermiculite mine in Libby may have produced 80 percent of the world's supply of vermiculite. Vermiculite has been used in building materials, as a soil conditioner, and as backfill material. It has been determined that the vermiculite from the Libby mine was contaminated with an exceedingly toxic form of naturally occurring asbestos called tremolite-actinolite asbestiform mineral fibers, herein referred to as Libby Amphibole (LA) asbestos.

Since late 1999, EPA, with assistance from the Volpe Center, has conducted comprehensive cleanup of properties throughout Libby, Montana. The purpose of this document is to outline operations at the abandoned W.R. Grace mine (mine), which will serve as a disposal location for asbestos contaminated soil and material from numerous operable units and residences in Lincoln County, Montana as required by the EPA. Currently, asbestos contaminated soil is disposed at the mine, and VCI (along with asbestos contaminated material – ACM) is disposed of at the asbestos cell at the Lincoln County Class IV Asbestos Landfill (herein referred to as the Asbestos Cell). This Abandoned W.R. Grace Mine Disposal Operations Plan serves as a guidance document for current and future project mine operations, but may be amended at any time to reflect changes in operations and/or protocol.

Section 2
Abandoned W.R. Grace Mine Disposal Operations Plan

2.1 Mine Site Description

The mine site is located approximately 6.6 miles up Rainy Creek Road (Mine Road) from Highway 37 in Libby, Montana. Historically, this site was the origin of raw vermiculite materials. All asbestos contaminated soils and some commingled contaminated materials that are associated with the EPA's removal action in Libby, shall be disposed of at the mine.

Contaminated soils shall be hauled to the Mine Road and disposed of two miles along the paved road from Highway 37 at the former amphitheater area (amphitheater). A waste transfer station was constructed at the amphitheater previous to the 2003 construction season for overall project use. The mine road is paved from Highway 37 to the waste transfer station in order to allow trucks outfitted with positive pressure units to unload their waste and return to work sites in the Libby area while staying on an asphalt surface. The asphalt road serves as a "clean" surface for trucks to travel on and remain clean throughout the truck-hauling trip. The removal contractor shall utilize a water truck to maintain a clean asphalt surface during mine operations. The contractor shall have the truck driver dump the contents of the truck's bed and then proceed to clean the truck bed and rinse the truck tires before allowing the truck to leave the exclusion zone. The exclusion zone begins approximately 100 yards from the green gate, which is located at the beginning of the mine road, and continues the distance to the mine. The contractor shall then transfer the waste to trucks dedicated to the exclusion zone from the amphitheater staging area. These trucks will then haul the contaminated waste to the dumpsite (Area 19) at the mine. The contractor shall then spread and cover the placed soil and debris as necessary. At the end of the work season, any equipment dedicated to the exclusion zone will require a complete decontamination.

The contractor shall maintain the gravel roadway from the amphitheater to Area 19 to allow access to the mine for disposal of soil and debris. Water trucks shall be provided by the contractor to provide proper dust control. The contractor shall provide upkeep and maintenance of the road to prevent washouts and potholes from forming. The contractor shall also conduct regular treatment of the roadway to minimize the generation of dust from the road. Water shall also be applied to minimize dust generation around the disposal operations.

A separate decon pad has been installed within the waste transfer station for vehicles traveling between the exclusion zone and areas outside of the exclusion zone on a daily basis. The contractor shall be responsible for operating and maintaining this decon pad for any vehicles, previously authorized by the EPA, which use it.

Figures 1 through 5 (Appendix A) are photographs with additional details imported onto them to further illustrate amphitheater and mine operations.

2.2 Disposal Objectives

The disposal of materials from various removal actions is planned for a one shift per day basis. Each shift will last ten hours, five days a week, Monday through Friday. The Mine Road will be in operation as long as weather permits safe operation. Amphitheater operations may be able to continue longer than actual mine dumping operations, if this is the case, contaminated soils and material will be stored at the amphitheater until operations to Area 19 of the mine start up the following spring.

This Mine Operations Plan provides the minimum activities necessary to transport asbestos-contaminated soil to designated disposal locations at the mine site. All transport and disposal work will be carried out in accordance with this Mine Operations Plan, the approved Project Comprehensive Health and Safety Plan (HASP), the approved operations HASP developed by the contractor responsible for mine and asbestos cell operations, and all other government requirements. See Appendix A for the Comprehensive Site Health and Safety Program Plan, Initial Emergency Response Action, Libby Asbestos Project, Revision 1, May 2001.

Section 3
Decontamination

3.1 Equipment Decontamination

The contractor is responsible for thorough decontamination of the trucks. The contractor shall unlock tailgate locks, spray the truck box and rinse the truck tires with a pressure washer before allowing the truck to leave the exclusion zone. The truck driver may need to shake the truck box to dislodge any remaining soil from the box bed. The removal contractor will then visually inspect the truck for remaining debris and re-lock tailgate locks upon satisfaction of the inspector, before the truck is allowed back in rotation to the removal sites. In addition to the daily decontaminations of the trucks at the amphitheater, at the end of the work season, any equipment dedicated to the exclusion zone will require complete decontamination.

During the summer of 2003, a second decontamination pad was installed adjacent to the amphitheater waste transfer station for use by W.R. Grace during the KDC Flyway Property clean-up operations. This second decontamination pad was installed as to not interfere with daily decontamination procedures being conducted by the removal contractor. It is expected that W.R. Grace trucks will be hauling contaminated soil all the way to the mine and not using the waste transfer station at the amphitheater.

3.2 Personnel Decontamination

The Government's removal contractor shall provide decontamination facilities and rest room facilities on the border of the exclusion and clean zones. Each decontamination facility shall meet or exceed applicable Occupational Safety & Health Administration (OSHA) requirements, specifically those details pertaining to Safety and Health Regulations for Construction, Asbestos as outlined in 29 CFR Part 1926.1101. Each personnel decontamination facility shall be provided with a first-aid station, full engineering controls including, but not limited to, employee personal protection equipment (PPE), fences, signs, traffic tape, etc. The removal contractor will be required to provide sufficient water, heat, lighting, and electric power at each personnel decontamination facility. All decontamination water will be collected and disposed of at the disposal location (Area 19) at the mine. All personnel that may come in contact with asbestos-containing material must use the decontamination facilities whenever leaving the exclusion zone and when their work shift is completed.

Section 4
Haul Routes

The Mine Road will be closed to all persons and vehicles not directly involved in the asbestos removal project. No public access will be permitted. The removal contractor will use two-way radios for communication. Beginning in the fall of 2003, Citizens Band (CB) radios will also be installed in each truck so every driver has a reliable communication source during hauling operations. The removal contractor will be responsible for coordinating, loading, hauling, dumping, decontamination, and all related activities in an efficient manner with a minimum of down time. Traffic control and speed limits must be established and adhered to in order to accommodate the truck volume, and to continue operating in a safe manner.

A second haul route has been established near the amphitheater so that W.R. Grace's Flyway Property clean-up operations will not interfere with current hauling conditions. The trucks will go around the waste transfer station on their way back from hauling to the mine disposal area and will be staged on the road until their designated decontamination pad is available for required decontamination processes.

Section 5
Health and Safety

All work during the operation of the mine will be conducted in Level C PPE. However, truck drivers fitted with positive pressure units in their cabs will not be required to wear Level C PPE. Only OSHA trained employees will be permitted past the green gate on the Mine Road. All work during mine operations will comply with the Comprehensive Site HASP. The contractor will prepare a site specific Health and Safety Plan (HASP) for all work not included in the Comprehensive Site HASP. Minimum required elements of the site specific HASP are as follows:

- Delineation of work zones including exclusion zone, contamination reduction zone, and support zone;
- Description of site hazards and contaminants (asbestos);
- Identification of Site Health and Safety Coordinator;
- Description of Level C PPE, to include the use of air purifying respirators with P100 cartridges in the exclusion zone, and powered air purifying respirators (PAPRs) for the dozer operator stationed at Area 19;
- Any site field monitoring to be performed;
- Personnel and equipment decontamination procedures;
- Emergency contact names and phone numbers; and
- Signature page signed by all site personnel indicating that the HASP is understood and will be complied with.

Personnel air monitoring will be performed by the government's air monitoring subcontractor. Personnel air monitoring will be conducted at a frequency based on the results of the assessment in accordance with OSHA regulations.

Section 6
Air Monitoring

The government will be responsible for planning, coordinating, and conducting air monitoring during all transport and disposal activities. MACTEC will provide all labor, equipment, materials, and incidentals required to perform all perimeter and personnel air monitoring throughout the transport and disposal work at all locations identified in this operations plan. All air monitoring functions shall meet the applicable OSHA regulations and all government requirements.

An addition to ambient air sampling, personal air sampling on the removal contractor's workers and truck drivers will be conducted to document compliance with 29 CFR Part 1926.1101. All personal air samples will be collected and analyzed in accordance with 29 CFR 1926.1101.

Section 7
Transportation Activities

7.1 General

All truck drivers and personnel that may come in contact with asbestos-containing materials, must be 40-hour Hazardous Waste Operations (HAZWOPER) OSHA trained as described in the Comprehensive HASP. All personnel working on transport and disposal activities will be required to provide proper documentation confirming their 40-hour OSHA training certification is complete and refresher training is up to date. All trucks must be outfitted with positive pressure units in the cab area for truck driver safety.

The government's removal contractor will be responsible for planning, coordinating, controlling, and performing all transportation activities associated directly with mine operations. This includes, but is not limited to, determining and subcontracting the number of trucks and drivers needed for hauling materials from the amphitheater to Area 19, equipment and operators for loading trucks, covering all loads, equipment and personnel decontamination, dust suppression, disposal operations, Mine Road maintenance, traffic controls including signage, and all related work. The government's removal contractor will be responsible for performing the disposal activities in a safe manner while adhering to the requirements of this mine operations plan and the Comprehensive HASP. The Government's removal contractor may adjust the number of trucks and drivers working on the transport and disposal activities as necessary to minimize down time.

The Government's removal contractor will conduct the transport operations in compliance with all U.S. Department of Transportation (DOT) requirements, all Montana DOT requirements, applicable Montana Department of Environmental Quality (DEQ) ARM requirements, including but not limited to load limits and necessary permits and registrations.

7.2 Recordkeeping

Trucks transporting materials to the amphitheater and to the mine will not be weighed for purposes of determining quantities of contaminated soil and other materials being disposed at the mine. The Government's removal contractor shall be responsible for counting the trucks traveling to the mine (amphitheater and Area 19) and keeping a daily log of disposal activities. The contractor will be responsible for maintaining the bills of lading for the waste and furnishing a copy to the on-site government representative at the end of each season. Recordkeeping shall follow the rules outlined in the Montana Department of Environmental Quality (DEQ) Administrative Rules of Montana (ARM).

7.3 Loading

The Government's removal contractor shall load all trucks in a manner that does not produce visible dust and that is in compliance with all air monitoring levels established by the government for this project. Truckloads shall be limited to an amount that allows complete covering of the load and spillage on bumpy road does not occur. It is required that water misting be employed by the Government's removal contractor to control dust emissions during actual truck loading operations and periodically by water truck during travel from loading areas to the amphitheater.

7.4 Covering Loads

The Government's removal contractor shall cover all loaded trucks in a manner such that no visible or detectable dust emissions are generated during transport along Highway 37, the Mine Road or any other roadways traveled during the execution of the project. All loaded trucks traveling on public or private roads, shall be tightly covered with a weather tight canvas roll roof or other durable and tear-proof material in a manner such that emissions are not visible or detectable from the trucks at any time during the trip to the disposal locations at the mine site. Truck covers will extend a minimum of one foot below the top of the truck body and be secured to the truck body with elastic tie down straps. The removal contractor will immediately replace torn or damaged truck covers. Each truck cover will be checked by the removal contractor for condition and fit on the truck prior to the truck leaving a removal site, the amphitheater, or the disposal location at the mine.

7.5 Dumping

The removal contractor shall coordinate the disposal activities at the designated disposal areas at the amphitheater staging area and the actual mine dump site. Dumping contents of trucks shall be performed in a manner such that there are no visible or detectable dust emissions. Areas where disposal takes place will be sprayed with water to prevent dust emissions. Areas with dust emissions shall be sprayed with water until dust levels drop to acceptable levels as required by the government and do not endanger or impede the performance of personnel working in the area.

7.6 Dust Suppression on Rainy Creek Road (Mine Road)

Dust suppression is a primary concern with respect to transport and disposal activities on this project. The lower 2 miles of Rainy Creek Road is paved asphalt. Trucks and other equipment leaving the exclusion zone will be decontaminated at the amphitheater decontamination facility and proceed onto the paved portion of Rainy Creek Road to Highway 37. The primary method of dust control will be water utilization. The removal contractor shall have designated trucks moving contaminated soils and materials from the waste transfer station at the amphitheater to the mine disposal site, thus these trucks never leave the exclusion zone. The removal contractor will be required to provide an adequate

water supply and a sufficient number of water trucks and drivers to keep the Mine Road free from visible and detectable dust emissions at all times when transport activities are underway. Water truck drivers will be required to meet the same OSHA health and safety requirements as drivers of trucks hauling asbestos contaminated soils and other materials. Dust suppression measures will be conducted in compliance with the requirements established by the Montana DOT, the government, and in the approved HASP.

Section 8
Disposal Site Management

8.1 Staffing

The removal contractor shall be responsible for the coordination and planning of disposal activities at the mine site with transport activities. The removal contractor shall provide staff equipped with two-way communication in the trucks so that traffic runs smoothly and efficiently throughout the entire operation. The removal contractor will have representatives at the disposal locations to direct trucks to the appropriate disposal site. A sufficient number of workers shall be employed to provide adequate water for dust suppression at the amphitheater and at Area 19, and for directing truck traffic and other subcontractors throughout the operation.

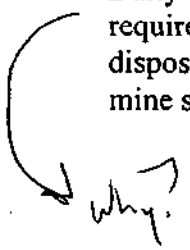
8.2 Water Supply

The removal contractor will be responsible for supplying adequate water supplies at the Area 19, along the Mine Road, at the amphitheater and at the personnel decontamination facility on Rainy Creek Road. The removal contractor has access to a settling pond located adjacent to the amphitheater in which the water is filtered for LA by 20 and 5 micron filters and then pumped for used in dust suppression and decontamination procedures.

8.3 Disposal Site Procedures

The removal contractor will coordinate all traffic flow at the disposal locations. Traffic flow includes the loading, transport, disposal, and departure of empty trucks so that each category of material is disposed at the disposal location designated by EPA to receive that particular waste. Removal contractor personnel shall direct each truck to the proper disposal location, direct the physical dumping of each truck load, provide acceptable dust suppression, conduct decontamination procedures, and provide the front end loader, bulldozer and all other mechanical equipment necessary to effectively operate the complete mine operations.

Daily cover will not be placed at the disposal sites. The removal contractor will be required to provide 6 inches of cover soil over disposal locations when transport and disposal operations are suspended for holiday periods or other reasons. A final design for mine stabilization once the project is complete, has not yet been finalized.



Section 9
Site Security

Security shall be present at the entrance of the Mine Road before the green gate during normal remedial operations hours. Normal operations hours consist of a 50-hour workweek, Monday through Friday, 7:00 a.m. to 6:30 p.m. The mine operations schedule will be contingent on proper weather conditions once the fall and winter seasons begin.

Appendix A

Appendix B

Appendix B
Additional Information Links

- U.S. Environmental Protection Agency (EPA) – Region 8
  http://www.epa.gov/region8/superfund/libby/

- U.S. Department of Transportation (DOT) - ***http://www.dot.gov***

- U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR Part 1926.1101 -
  http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10862

- Montana Department of Transportation (MDOT) –
  http://www.mdt.state.mt.us/

- Montana Department of Environmental Quality (DEQ), Administrative Rules of Montana (ARM) - ***http://www.deq.state.mt.us/dir/legal/title17.asp***

Appendix C